

SEQUENCE LISTING

<110> Kukolj, George and Pause, Armin

<120> SELF REPLICATING RNA MOLECULE FROM
HEPATITIS C VIRUS

<130> 13/083-2-C1

<140> To be assigned

<141> 2003-10-16

<150> US 10/029,907

<151> 2001-12-21

<150> US 60/257,857

<151> 2000-12-22

<160> 25

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 8639

<212> DNA

<213> HCV

<220>

<221> CDS

<222> (1803)...(8408)

<400> 1

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Val Ala Val	Glu Pro Val	Val Phe Ser	Asp Met Glu	Thr Lys Val	Ile	
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Ala Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly	480	485	490	495
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Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val	610	615	620	
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Pro Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr	
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Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu	
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Thr Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln	
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 Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala
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Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly	
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Phe	Thr 755	Gly	Leu	Thr	His	Ile	Asp 760	Ala	His	Phe	Leu	Ser 765	Gln	Thr	Lys	
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Gln	Ala 770	Gly	Asp	Asn	Phe	Pro 775	Tyr	Leu	Val	Ala 780	Tyr	Gln	Ala	Thr	Val	
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Cys	Ala	Arg	Ala	Gln 790	Ala	Pro	Pro	Pro	Ser 795	Trp	Asp	Gln	Met	Trp	Lys 800	
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Cys	Leu	Ile	Arg	Leu 805	Lys	Pro	Thr	Leu	His 810	Gly	Pro	Thr	Pro	Leu 815	Leu	
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Tyr	Arg	Leu	Gly 820	Ala	Val	Gln	Asn	Glu 825	Val	Thr	Thr	Thr	His 830	Pro	Ile	
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Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser	
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Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp	
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Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser			

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Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly			
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Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val			
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Trp	Gly	Ala	Asp	Thr	Ala	Ala	Cys	Gly	Asp	Ile	Ile	Leu	Gly	Leu	Pro		
			180					185					190				
gtc	tcc	gcc	cgc	agg	ggg	agg	gag	ata	cat	ctg	gga	ccg	gca	gac	agc	2425	
Val	Ser	Ala	Arg	Arg	Gly	Arg	Glu	Ile	His	Leu	Gly	Pro	Ala	Asp	Ser		
		195					200					205					
ctt	gaa	ggg	cag	ggg	tgg	cga	ctc	ctc	gcg	cct	att	acg	gcc	tac	tcc	2473	
Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser		
	210					215					220						
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	act	agc	ctc	aca	ggc	2521	
Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly		
225					230					235					240		
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569	
Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala		
				245					250					255			
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617	
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val		
			260					265					270				
tat	cat	ggg	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665	
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile		
		275					280					285					
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713	
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala		
	290				295					300							
ccc	ccc	ggg	gcg	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761	
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp		
305					310					315					320		
ctt	tac	ttg	gtc	acg	aag	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809	
Leu	Tyr	Leu	Val	Thr	Lys	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg		
				325					330					335			
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	cgg	ccc	gtc	tcc	tac	ttg	2857	
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu		
			340					345					350				
aag	ggc	tct	tcg	ggc	ggg	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905	
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val		
		355					360					365					

ggc atc ttt cgg gct gcc gtg tgc acc cga ggg gtt gcg aag gcg gtg Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val 370 375 380	2953
gac ttt gta ccc gtc gag tct atg gaa acc act atg cgg tcc ccg gtc Asp Phe Val Pro Val Glu Ser Met Glu Thr Thr Met Arg Ser Pro Val 385 390 395 400	3001
ttc acg gac aac tcg tcc cct ccg gcc gta ccg cag aca ttc cag gtg Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Thr Phe Gln Val 405 410 415	3049
gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg ccg Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro 420 425 430	3097
gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser 435 440 445	3145
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly 450 455 460	3193
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala 465 470 475 480	3241
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys 485 490 495	3289
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys Asp Glu Cys His Ser Thr 500 505 510	3337
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu 515 520 525	3385
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly 530 535 540	3433
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser 545 550 555 560	3481
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile 565 570 575	3529
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp 580 585 590	3577

gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat	3625
Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr	
595 600 605	
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att	3673
Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile	
610 615 620	
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac	3721
Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp	
625 630 635 640	
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc	3769
Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser	
645 650 655	
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg	3817
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Val Pro Gln Asp Ala	
660 665 670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc	3865
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly	
675 680 685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat	3913
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp	
690 695 700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag	3961
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu	
705 710 715 720	
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca	4009
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr	
725 730 735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag ggc gtc	4057
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val	
740 745 750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag	4105
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys	
755 760 765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg	4153
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val	
770 775 780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag	4201
Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys	
785 790 795 800	
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg	4249
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu	

805					810					815						
tat	agg	ctg	gga	gcc	gtt	caa	aac	gag	gtt	act	acc	aca	cac	ccc	ata	4297
Tyr	Arg	Leu	Gly	Ala	Val	Gln	Asn	Glu	Val	Thr	Thr	Thr	His	Pro	Ile	
			820					825					830			
acc	aaa	tac	atc	atg	gca	tgc	atg	tcg	gct	gac	ctg	gag	gtc	gtc	acg	4345
Thr	Lys	Tyr	Ile	Met	Ala	Cys	Met	Ser	Ala	Asp	Leu	Glu	Val	Val	Thr	
		835					840					845				
agc	acc	tgg	gtg	ctg	gta	ggc	gga	gtc	cta	gca	gct	ctg	gcc	gcg	tat	4393
Ser	Thr	Trp	Val	Leu	Val	Gly	Gly	Val	Leu	Ala	Ala	Leu	Ala	Ala	Tyr	
	850					855					860					
tgc	ctg	aca	aca	ggc	agc	gtg	gtc	att	gtg	ggc	agg	atc	atc	ttg	tcc	4441
Cys	Leu	Thr	Thr	Gly	Ser	Val	Val	Ile	Val	Gly	Arg	Ile	Ile	Leu	Ser	
865					870					875					880	
gga	agg	ccg	gcc	atc	att	ccc	gac	agg	gaa	gtc	ctt	tac	cgg	gag	ttc	4489
Gly	Arg	Pro	Ala	Ile	Ile	Pro	Asp	Arg	Glu	Val	Leu	Tyr	Arg	Glu	Phe	
			885						890					895		
gat	gag	atg	gaa	gag	tgc	gcc	tca	cac	ctc	cct	tac	atc	gaa	cag	gga	4537
Asp	Glu	Met	Glu	Glu	Cys	Ala	Ser	His	Leu	Pro	Tyr	Ile	Glu	Gln	Gly	
			900					905					910			
atg	cag	ctc	gcc	gaa	caa	ttc	aaa	cag	aag	gca	atc	ggg	ttg	ctg	caa	4585
Met	Gln	Leu	Ala	Glu	Gln	Phe	Lys	Gln	Lys	Ala	Ile	Gly	Leu	Leu	Gln	
		915					920					925				
aca	gcc	acc	aag	caa	gcg	gag	gct	gct	gct	ccc	gtg	gtg	gaa	tcc	aag	4633
Thr	Ala	Thr	Lys	Gln	Ala	Glu	Ala	Ala	Ala	Pro	Val	Val	Glu	Ser	Lys	
	930					935					940					
tgg	cgg	acc	ctc	gaa	gcc	ttc	tgg	gcg	aag	cat	atg	tgg	aat	ttc	atc	4681
Trp	Arg	Thr	Leu	Glu	Ala	Phe	Trp	Ala	Lys	His	Met	Trp	Asn	Phe	Ile	
945					950					955					960	
agc	ggg	ata	caa	tat	tta	gca	ggc	ttg	tcc	act	ctg	cct	ggc	aac	ccc	4729
Ser	Gly	Ile	Gln	Tyr	Leu	Ala	Gly	Leu	Ser	Thr	Leu	Pro	Gly	Asn	Pro	
			965					970						975		
gcg	ata	gca	tca	ctg	atg	gca	ttc	aca	gcc	tct	atc	acc	agc	ccg	ctc	4777
Ala	Ile	Ala	Ser	Leu	Met	Ala	Phe	Thr	Ala	Ser	Ile	Thr	Ser	Pro	Leu	
			980					985					990			
acc	acc	caa	cat	acc	ctc	ctg	ttt	aac	atc	ctg	ggg	gga	tgg	gtg	gcc	4825
Thr	Thr	Gln	His	Thr	Leu	Leu	Phe	Asn	Ile	Leu	Gly	Gly	Trp	Val	Ala	
		995					1000					1005				
gcc	caa	ctt	gct	cct	ccc	agc	gct	gct	tcc	gct	ttc	gta	ggc	gcc	ggc	4873
Ala	Gln	Leu	Ala	Pro	Pro	Ser	Ala	Ala	Ser	Ala	Phe	Val	Gly	Ala	Gly	
	1010					1015					1020					
atc	gct	gga	gcg	gct	gtt	ggc	agc	ata	ggc	ctt	ggg	aag	gtg	ctt	gtg	4921

Ile	Ala	Gly	Ala	Ala	Val	Gly	Ser	Ile	Gly	Leu	Gly	Lys	Val	Leu	Val		
1025					1030					1035					1040		
gat	att	ttg	gca	ggg	tat	gga	gca	ggg	gtg	gca	ggc	gcg	ctc	gtg	gcc	4969	
Asp	Ile	Leu	Ala	Gly	Tyr	Gly	Ala	Gly	Val	Ala	Gly	Ala	Leu	Val	Ala		
				1045					1050					1055			
ttt	aag	gtc	atg	agc	ggc	gag	atg	ccc	tcc	acc	gag	gac	ctg	gtt	aac	5017	
Phe	Lys	Val	Met	Ser	Gly	Glu	Met	Pro	Ser	Thr	Glu	Asp	Leu	Val	Asn		
			1060					1065					1070				
cta	ctc	cct	gct	atc	ctc	tcc	cct	ggc	gcc	cta	gtc	gtc	ggg	gtc	gtg	5065	
Leu	Leu	Pro	Ala	Ile	Leu	Ser	Pro	Gly	Ala	Leu	Val	Val	Gly	Val	Val		
			1075					1080					1085				
tgc	gca	gcg	ata	ctg	cgt	cgg	cac	gtg	ggc	cca	ggg	gag	ggg	gct	gtg	5113	
Cys	Ala	Ala	Ile	Leu	Arg	Arg	His	Val	Gly	Pro	Gly	Glu	Gly	Ala	Val		
	1090					1095					1100						
cag	tgg	atg	aac	cgg	ctg	ata	gcg	ttc	gct	tcg	cgg	ggg	aac	cac	gtc	5161	
Gln	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Ser	Arg	Gly	Asn	His	Val		
	1105				1110					1115					1120		
tcc	ccc	acg	cac	tat	gtg	cct	gag	agc	gac	gct	gca	gca	cgt	gtc	act	5209	
Ser	Pro	Thr	His	Tyr	Val	Pro	Glu	Ser	Asp	Ala	Ala	Ala	Arg	Val	Thr		
				1125					1130					1135			
cag	atc	ctc	tct	agt	ctt	acc	atc	act	cag	ctg	ctg	aag	agg	ctt	cac	5257	
Gln	Ile	Leu	Ser	Ser	Leu	Thr	Ile	Thr	Gln	Leu	Leu	Lys	Arg	Leu	His		
			1140					1145					1150				
cag	tgg	atc	aac	gag	gac	tgc	tcc	acg	cca	tgc	tcc	ggc	tcg	tgg	cta	5305	
Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
		1155				1160						1165					
aga	gat	gtt	tgg	gat	tgg	ata	tgc	acg	gtg	ttg	act	gat	ttc	aag	gcc	5353	
Arg	Asp	Val	Trp	Asp	Trp	Ile	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Ala		
	1170					1175				1180							
tgg	ctc	cag	tcc	aag	ctc	ctg	ccg	cga	ttg	ccg	gga	gtc	ccc	ttc	ttc	5401	
Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
	1185				1190				1195					1200			
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449	
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
				1205					1210					1215			
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
			1220					1225					1230				
tgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
		1235				1240						1245					

gga aca ttc ccc att aac gcg tac acc acg ggc ccc tgc acg ccc tcc	5593
Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Ser	
1250 1255 1260	
ccg gcg cca aat tat tct agg gcg ctg tgg ccg gtg gct gct gag gag	5641
Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu	
1265 1270 1275 1280	
tac gtg gag gtt acg cga gtg ggg gat ttc cac tac gtg acg ggc atg	5689
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met	
1285 1290 1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc	5737
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe	
1300 1305 1310	
ttc aca gaa gtg gat ggg gtg ccg ttg cac agg tac gct cca gcg tgc	5785
Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys	
1315 1320 1325	
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa	5833
Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln	
1330 1335 1340	
tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca	5881
Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala	
1345 1350 1355 1360	
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg	5929
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr	
1365 1370 1375	
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca	5977
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser	
1380 1385 1390	
tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act acc	6025
Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr	
1395 1400 1405	
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg	6073
Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp	
1410 1415 1420	
ccg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat aag	6121
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys	
1425 1430 1435 1440	
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag	6169
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	
1445 1450 1455	
agg gaa gta tcc gtt ccg gcg gag atc ctg ccg agg tcc agg aaa ttc	6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
1460 1465 1470	

cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg	6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
1475 1480 1485	
ttg gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg	6313
Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
1490 1495 1500	
tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg	6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
1505 1510 1515 1520	
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
1525 1530 1535	
gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
1540 1545 1550	
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly	
1570 1575 1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser	
1585 1590 1595 1600	
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg	6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp	
1605 1610 1615	
acg ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro	
1620 1625 1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr	
1635 1640 1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe	
1650 1655 1660	
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag	6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
1665 1670 1675 1680	
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	

1685										1690					1695					
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937																			
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly																				
1700 1705 1710																				
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985																			
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His																				
1715 1720 1725																				
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att	7033																			
Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile																				
1730 1735 1740																				
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag	7081																			
Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu																				
1745 1750 1755 1760																				
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg	7129																			
Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly																				
1765 1770 1775																				
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc	7177																			
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu																				
1780 1785 1790																				
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga	7225																			
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly																				
1795 1800 1805																				
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct	7273																			
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro																				
1810 1815 1820																				
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag	7321																			
Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu																				
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Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile																				
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Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr																				
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Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu
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Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val
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Cys	Ala	Ala	Ile	Leu	Arg	Arg	His	Val	Gly	Pro	Gly	Glu	Gly	Ala	Val		
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Gln	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Ser	Arg	Gly	Asn	His	Val		
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Gln	Ile	Leu	Ser	Ser	Leu	Thr	Ile	Thr	Gln	Leu	Leu	Lys	Arg	Leu	His		
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Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
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Arg	Asp	Val	Trp	Asp	Trp	Val	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Thr		
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Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
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Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
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Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
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Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
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Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
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Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met	
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Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe	
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Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys	
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Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln	
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Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala	
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Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	
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Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
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Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
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Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
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Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
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Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
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Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
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Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu			
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Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly			
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Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu			
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Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly			
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Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro			
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Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu			
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Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala			
	1845	1850	1855
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc			7417
Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile			
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Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg			
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Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr			
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Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp			
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Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser			
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Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg	
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Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser	
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Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala	
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Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His	
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Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala	
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Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu	
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Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp	
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Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg	
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Ala Arg Pro Arg Trp Phe Thr Trp Cys Leu Leu Leu Leu Ser Val Gly	
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Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu	
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Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala	
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Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala	
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Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro	
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Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser	
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Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala	
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Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val	
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Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile	
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Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala	
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Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp	
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ggc	gac	ggc	agg	ggg	agc	cta	ctc	tcc	ccc	agg	ccc	gtc	tcc	tac	ttg	2857
Gly	Asp	Gly	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu	
			340					345					350			
aag	ggc	tct	tcg	ggc	ggc	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val	
		355					360					365				
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcg	aag	gcg	gtg	2953
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val	
	370					375					380					
gac	ttt	gta	ccc	gtc	gag	tct	atg	gga	acc	act	atg	cgg	tcc	ccg	gtc	3001
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Gly	Thr	Thr	Met	Arg	Ser	Pro	Val	
385					390					395					400	
ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	ttc	cag	gtg	3049
Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Thr	Phe	Gln	Val	
				405					410					415		
gcc	cat	cta	cac	gcc	cct	act	ggc	agc	ggc	aag	agc	act	aag	gtg	ccg	3097
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	
			420					425					430			

gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser 435 440 445	3145
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly 450 455 460	3193
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala 465 470 475 480	3241
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys 485 490 495	3289
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys Asp Glu Cys His Ser Thr 500 505 510	3337
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu 515 520 525	3385
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly 530 535 540	3433
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser 545 550 555 560	3481
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile 565 570 575	3529
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp 580 585 590	3577
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr 595 600 605	3625
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile 610 615 620	3673
gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp 625 630 635 640	3721
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser 645 650 655	3769

ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg	3817
Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Val Pro Gln Asp Ala	
660 665 670	
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc	3865
Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly	
675 680 685	
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat	3913
Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp	
690 695 700	
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag	3961
Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu	
705 710 715 720	
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca	4009
Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr	
725 730 735	
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc	4057
Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val	
740 745 750	
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag	4105
Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys	
755 760 765	
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg	4153
Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val	
770 775 780	
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag	4201
Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys	
785 790 795 800	
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg	4249
Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu	
805 810 815	
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata	4297
Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr Thr His Pro Ile	
820 825 830	
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg	4345
Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr	
835 840 845	
agc acc tgg gtg ctg gta ggc gga gtc cta gca gct ctg gcc gcg tat	4393
Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr	
850 855 860	
tgc ctg aca aca ggc agc gtg gtc att gtg ggc agg atc atc ttg tcc	4441
Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser	

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gga aag ccg gcc atc att ccc gac agg gaa gtc ttt tac cgg gag ttc	4489						
Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Phe Tyr Arg Glu Phe							
		885		890		895	
gat gag atg gaa gag tgc gcc tca cac ctc cct tac atc gaa cag gga	4537						
Asp Glu Met Glu Glu Cys Ala Ser His Leu Pro Tyr Ile Glu Gln Gly							
		900		905		910	
atg cag ctc gcc gaa caa ttc aaa cag aag gca atc ggg ttg ctg caa	4585						
Met Gln Leu Ala Glu Gln Phe Lys Gln Lys Ala Ile Gly Leu Leu Gln							
		915		920		925	
aca gcc acc aag caa gcg gag gct gct gct ccc gtg gtg gaa tcc aag	4633						
Thr Ala Thr Lys Gln Ala Glu Ala Ala Ala Pro Val Val Glu Ser Lys							
		930		935		940	
tgg cgg acc ctc gaa gcc ttc tgg gcg aag cat atg tgg aat ttc atc	4681						
Trp Arg Thr Leu Glu Ala Phe Trp Ala Lys His Met Trp Asn Phe Ile							
		945		950		955	960
agc ggg ata caa tat tta gca ggc ttg tcc act ctg cct ggc aac ccc	4729						
Ser Gly Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro							
		965		970		975	
gcg ata gca tca ctg atg gca ttc aca gcc tct atc acc agc ccg ctc	4777						
Ala Ile Ala Ser Leu Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu							
		980		985		990	
acc acc caa cat acc ctc ctg ttt aac atc ctg ggg gga tgg gtg gcc	4825						
Thr Thr Gln His Thr Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala							
		995		1000		1005	
gcc caa ctt gct cct ccc agc gct gct tct gct ttc gta ggc gcc ggc	4873						
Ala Gln Leu Ala Pro Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly							
		1010		1015		1020	
atc gct gga gcg gct gtt ggc agc ata ggc ctt ggg aag gtg ctt gtg	4921						
Ile Ala Gly Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val							
		1025		1030		1035	1040
gat att ttg gca ggt tat gga gca ggg gtg gca ggc gcg ctc gtg gcc	4969						
Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala							
		1045		1050		1055	
ttt aag gtc atg agc ggc gag atg ccc tcc acc gag gac ctg gtt aac	5017						
Phe Lys Val Met Ser Gly Glu Met Pro Ser Thr Glu Asp Leu Val Asn							
		1060		1065		1070	
cta ctc cct gct atc ctc tcc cct ggc gcc cta gtc gtc ggg gtc gtg	5065						
Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val							
		1075		1080		1085	
tgc gca gcg ata ctg cgt cgg cac gtg ggc cca ggg gag ggg gct gtg	5113						

Cys	Ala	Ala	Ile	Leu	Arg	Arg	His	Val	Gly	Pro	Gly	Glu	Gly	Ala	Val		
1090						1095					1100						
cag	tgg	atg	aac	cgg	ctg	ata	gcg	ttc	gct	tgc	cgg	ggg	aac	cac	gtc	5161	
Gln	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Ser	Arg	Gly	Asn	His	Val		
1105					1110					1115					1120		
tcc	ccc	acg	cac	tat	gtg	cct	gag	agc	gac	gct	gca	gca	cgt	gtc	act	5209	
Ser	Pro	Thr	His	Tyr	Val	Pro	Glu	Ser	Asp	Ala	Ala	Ala	Arg	Val	Thr		
				1125					1130					1135			
cag	atc	ctc	tct	agt	ctt	acc	atc	act	cag	ctg	ctg	aag	agg	ctt	cac	5257	
Gln	Ile	Leu	Ser	Ser	Leu	Thr	Ile	Thr	Gln	Leu	Leu	Lys	Arg	Leu	His		
			1140					1145					1150				
cag	tgg	atc	aac	gag	gac	tgc	tcc	acg	cca	tgc	tcc	ggc	tgc	tgg	cta	5305	
Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
		1155				1160						1165					
aga	gat	gtt	tgg	gat	tgg	ata	tgc	acg	gtg	ttg	act	gat	ttc	aag	acc	5353	
Arg	Asp	Val	Trp	Asp	Trp	Ile	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Thr		
	1170				1175						1180						
tgg	ctc	cag	tcc	aag	ctc	ctg	ccg	cga	ttg	ccg	gga	gtc	ccc	ttc	ttc	5401	
Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
1185					1190				1195					1200			
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449	
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
			1205						1210					1215			
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
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cgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Arg	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
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gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593	
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser		
	1250					1255					1260						
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641	
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
1265					1270				1275					1280			
tac	gtg	gag	gtt	acg	cgg	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689	
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met		
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acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737	
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe		
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gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp 1540 1545 1550	6457
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp 1555 1560 1565	6505
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly 1570 1575 1580	6553
gag ccg ggg gat ccc gat ctc agc gac ggg cct tgg tct acc gta agc Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Pro Trp Ser Thr Val Ser 1585 1590 1595 1600	6601
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp 1605 1610 1615	6649
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro 1620 1625 1630	6697
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr 1635 1640 1645	6745
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe 1650 1655 1660	6793
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu 1665 1670 1675 1680	6841
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu 1685 1690 1695	6889
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly 1700 1705 1710	6937
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His 1715 1720 1725	6985
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730 1735 1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu 1745 1750 1755 1760 1765 1770 1775 1780 1785 1790 1795 1800	7081

1745	1750	1755	1760	
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg				7129
Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly	1765	1770	1775	
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc				7177
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu	1780	1785	1790	
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga				7225
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly	1795	1800	1805	
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct				7273
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro	1810	1815	1820	
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag				7321
Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu	1825	1830	1835	1840
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc				7369
Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala	1845	1850	1855	
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc				7417
Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile	1860	1865	1870	
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg				7465
Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg	1875	1880	1885	
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca				7513
Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr	1890	1895	1900	
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac				7561
Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp	1905	1910	1915	1920
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc				7609
Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser	1925	1930	1935	
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct				7657
Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala	1940	1945	1950	
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac				7705
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr	1955	1960	1965	
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac				7753

Asp	Leu	Glu	Leu	Ile	Thr	Ser	Cys	Ser	Ser	Asn	Val	Ser	Val	Ala	His		
1970						1975					1980						
gat	gca	tct	ggc	aaa	agg	gtg	tac	tat	ctc	acc	cgt	gac	ccc	acc	acc	7801	
Asp	Ala	Ser	Gly	Lys	Arg	Val	Tyr	Tyr	Leu	Thr	Arg	Asp	Pro	Thr	Thr		
1985					1990					1995					2000		
ccc	ctt	gcg	cgg	gct	gcg	tgg	gag	aca	gct	aga	cac	act	cca	gtc	aat	7849	
Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn		
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tcc	tgg	cta	ggc	aac	atc	atc	atg	tat	gcg	ccc	acc	ttg	tgg	gca	agg	7897	
Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg		
			2020					2025					2030				
atg	atc	ctg	atg	act	cat	ttc	ttc	tcc	atc	ctt	cta	gct	cag	gaa	caa	7945	
Met	Ile	Leu	Met	Thr	His	Phe	Phe	Ser	Ile	Leu	Leu	Ala	Gln	Glu	Gln		
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ctt	gaa	aaa	gcc	cta	gat	tgt	cag	atc	tac	ggg	gcc	tgt	tac	tcc	att	7993	
Leu	Glu	Lys	Ala	Leu	Asp	Cys	Gln	Ile	Tyr	Gly	Ala	Cys	Tyr	Ser	Ile		
	2050					2055				2060							
gag	cca	ctt	gac	cta	cct	cag	atc	att	caa	cga	ctc	cac	ggc	ctt	agc	8041	
Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile	Gln	Arg	Leu	His	Gly	Leu	Ser		
2065					2070				2075						2080		
gca	ttt	tca	ctc	cat	agt	tac	tct	cca	ggt	gag	atc	aat	agg	gtg	gct	8089	
Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro	Gly	Glu	Ile	Asn	Arg	Val	Ala		
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tca	tgc	ctc	agg	aaa	ctt	ggg	gta	ccg	ccc	ttg	cga	gtc	tgg	aga	cat	8137	
Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro	Pro	Leu	Arg	Val	Trp	Arg	His		
			2100					2105					2110				
cgg	gcc	aga	agt	gtc	cgc	gct	agg	cta	ctg	tcc	cag	ggg	ggg	agg	gct	8185	
Arg	Ala	Arg	Ser	Val	Arg	Ala	Arg	Leu	Leu	Ser	Gln	Gly	Gly	Arg	Ala		
		2115				2120					2125						
gcc	act	tgt	ggc	aag	tac	ctc	ttc	aac	tgg	gca	gta	agg	acc	aag	ctc	8233	
Ala	Thr	Cys	Gly	Lys	Tyr	Leu	Phe	Asn	Trp	Ala	Val	Arg	Thr	Lys	Leu		
	2130					2135				2140							
aaa	ctc	act	cca	atc	ccg	gct	gcg	tcc	cag	ttg	gat	tta	tcc	agc	tgg	8281	
Lys	Leu	Thr	Pro	Ile	Pro	Ala	Ala	Ser	Gln	Leu	Asp	Leu	Ser	Ser	Trp		
2145					2150				2155						2160		
ttc	gtt	gct	ggg	tac	agc	ggg	gga	gac	ata	tat	cac	agc	ctg	tct	cgt	8329	
Phe	Val	Ala	Gly	Tyr	Ser	Gly	Gly	Asp	Ile	Tyr	His	Ser	Leu	Ser	Arg		
				2165					2170					2175			
gcc	cga	ccc	cgc	tgg	ttc	atg	tgg	tgc	cta	ctc	cta	ctt	tct	gta	ggg	8377	
Ala	Arg	Pro	Arg	Trp	Phe	Met	Trp	Cys	Leu	Leu	Leu	Leu	Ser	Val	Gly		
			2180					2185					2190				

gta ggc atc tat cta ctc ccc aac cga tga acgaggagct aaacactcca 8427
 Val Gly Ile Tyr Leu Leu Pro Asn Arg *
 2195 2200

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caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
			1220				1225					1230					
tgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
	1235					1240						1245					
gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593	
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser		
	1250				1255					1260							
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641	
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
1265				1270				1275						1280			
tac	gtg	gag	gtt	acg	cga	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689	
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met		
			1285					1290						1295			
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737	
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe		
			1300				1305					1310					
ttc	aca	gaa	gtg	gat	ggg	gtg	cgg	ttg	cac	agg	tac	gct	cca	gcg	tgc	5785	
Phe	Thr	Glu	Val	Asp	Gly	Val	Arg	Leu	His	Arg	Tyr	Ala	Pro	Ala	Cys		
		1315				1320					1325						
aaa	ccc	ctc	cta	cgg	gag	gag	gtc	aca	ttc	ctg	gtc	ggg	ctc	aat	caa	5833	
Lys	Pro	Leu	Leu	Arg	Glu	Glu	Val	Thr	Phe	Leu	Val	Gly	Leu	Asn	Gln		
	1330				1335			1340									

tac ccg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca	5881
Tyr Pro Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala	
1345 1350 1355 1360	
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg	5929
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr	
1365 1370 1375	
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca	5977
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser	
1380 1385 1390	
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Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr	
1395 1400 1405	
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg	6073
Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp	
1410 1415 1420	
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gag aat aag	6121
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys	
1425 1430 1435 1440	
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag	6169
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	
1445 1450 1455	
agg gaa gta tcc gtt ccg gcg gag atc ctg ccg agg tcc agg aaa ttc	6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
1460 1465 1470	
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg	6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
1475 1480 1485	
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Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
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Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
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aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
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gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
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agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	

gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly 1570 1575 1580	6553
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser 1585 1590 1595 1600	6601
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp 1605 1610 1615	6649
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro 1620 1625 1630	6697
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr 1635 1640 1645	6745
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe 1650 1655 1660	6793
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu 1665 1670 1675 1680	6841
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gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly 1700 1705 1710	6937
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His 1715 1720 1725	6985
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile 1730 1735 1740	7033
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu 1745 1750 1755 1760	7081
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly 1765 1770 1775	7129
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu	7177

1780	1785	1790	
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga			7225
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly			
1795	1800	1805	
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct			7273
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro			
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atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag			7321
Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu			
1825	1830	1835	1840
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc			7369
Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala			
1845	1850	1855	
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc			7417
Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile			
1860	1865	1870	
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg			7465
Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg			
1875	1880	1885	
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca			7513
Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr			
1890	1895	1900	
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac			7561
Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp			
1905	1910	1915	1920
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc			7609
Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser			
1925	1930	1935	
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct			7657
Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala			
1940	1945	1950	
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac			7705
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr			
1955	1960	1965	
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac			7753
Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala His			
1970	1975	1980	
gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc			7801
Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr			
1985	1990	1995	2000
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat			7849

Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn		
				2005					2010					2015			
tcc	tgg	cta	ggc	aac	atc	atc	atg	tat	gcg	ccc	acc	ttg	tgg	gca	agg	7897	
Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg		
			2020					2025					2030				
atg	atc	ctg	atg	act	cat	ttc	ttc	tcc	atc	ctt	cta	gct	cag	gaa	caa	7945	
Met	Ile	Leu	Met	Thr	His	Phe	Phe	Ser	Ile	Leu	Leu	Ala	Gln	Glu	Gln		
			2035					2040				2045					
ctt	gaa	aaa	gcc	cta	gat	tgt	cag	atc	tac	ggg	gcc	tgt	tac	tcc	att	7993	
Leu	Glu	Lys	Ala	Leu	Asp	Cys	Gln	Ile	Tyr	Gly	Ala	Cys	Tyr	Ser	Ile		
	2050					2055					2060						
gag	cca	ctt	gac	cta	cct	cag	atc	att	caa	cga	ctc	cac	ggc	ctt	agc	8041	
Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile	Gln	Arg	Leu	His	Gly	Leu	Ser		
2065					2070				2075						2080		
gca	ttt	tca	ctc	cat	agt	tac	tct	cca	ggt	gag	atc	aat	agg	gtg	gct	8089	
Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro	Gly	Glu	Ile	Asn	Arg	Val	Ala		
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tca	tgc	ctc	agg	aaa	ctt	ggg	gta	ccg	ccc	ttg	cga	gtc	tgg	aga	cat	8137	
Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro	Pro	Leu	Arg	Val	Trp	Arg	His		
			2100					2105					2110				
cgg	gcc	aga	agt	gtc	cgc	gct	agg	cta	ctg	tcc	cag	ggg	ggg	agg	gct	8185	
Arg	Ala	Arg	Ser	Val	Arg	Ala	Arg	Leu	Leu	Ser	Gln	Gly	Gly	Arg	Ala		
			2115				2120					2125					
gcc	act	tgt	ggc	aag	tac	ctc	ttc	aac	tgg	gca	gta	agg	acc	aag	ctc	8233	
Ala	Thr	Cys	Gly	Lys	Tyr	Leu	Phe	Asn	Trp	Ala	Val	Arg	Thr	Lys	Leu		
	2130					2135					2140						
aaa	ctc	act	cca	atc	ccg	gct	gcg	tcc	cag	ttg	gat	tta	tcc	agc	tgg	8281	
Lys	Leu	Thr	Pro	Ile	Pro	Ala	Ala	Ser	Gln	Leu	Asp	Leu	Ser	Ser	Trp		
2145					2150				2155						2160		
ttc	gtt	gct	ggt	tac	agc	ggg	gga	gac	ata	tat	cac	agc	ctg	tct	cgt	8329	
Phe	Val	Ala	Gly	Tyr	Ser	Gly	Gly	Asp	Ile	Tyr	His	Ser	Leu	Ser	Arg		
				2165					2170				2175				
gcc	cga	ccc	cgc	tgg	ttc	atg	tgg	tgc	cta	ctc	cta	ctt	tct	gta	ggg	8377	
Ala	Arg	Pro	Arg	Trp	Phe	Met	Trp	Cys	Leu	Leu	Leu	Leu	Ser	Val	Gly		
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gta	ggc	atc	tat	cta	ctc	ccc	aac	cga	tga	acggggagct	aaacactcca					8427	
Val	Gly	Ile	Tyr	Leu	Leu	Pro	Asn	Arg	*								
			2195					2200									
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 gac 63

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c atg gac	cgg gag atg	gca gca tcg	tgc gga ggc	gcg gtt ttc	gta ggt	1849
Met Asp	Arg Glu Met	Ala Ala Ser	Cys Gly Gly	Ala Val Phe	Val Gly	
1	5	10	15			
ctg ata ctc	ttg acc ttg	tca ccg cac	tat aag ctg	ttc ctc gct	agg	1897
Leu Ile Leu	Leu Thr Leu	Ser Pro His	Tyr Lys Leu	Phe Leu Ala	Arg	
	20	25	30			
ctc ata tgg	tgg tta caa	tat ttt atc	acc agg gcc	gag gca cac	ttg	1945
Leu Ile Trp	Trp Leu Gln	Tyr Phe Ile	Thr Arg Ala	Glu Ala His	Leu	
	35	40	45			
caa gtg tgg	atc ccc ccc	ctc aac gtt	cgg ggg ggc	cgc gat gcc	gtc	1993
Gln Val Trp	Ile Pro Pro	Leu Asn Val	Arg Gly Gly	Arg Asp Ala	Val	
	50	55	60			
atc ctc ctc	acg tgc gcg	atc cac cca	gag cta atc	ttt acc atc	acc	2041
Ile Leu Leu	Thr Cys Ala	Ile His Pro	Glu Leu Ile	Phe Thr Ile	Thr	
65	70	75	80			
aaa atc ttg	ctc gcc ata	ctc ggt cca	ctc atg gtg	ctc cag gct	ggt	2089
Lys Ile Leu	Leu Ala Ile	Leu Gly Pro	Leu Met Val	Leu Gln Ala	Gly	
	85	90	95			
ata acc aaa	gtg ccg tac	ttc gtg cgc	gca cac ggg	ctc att cgt	gca	2137
Ile Thr Lys	Val Pro Tyr	Phe Val Arg	Ala His Gly	Leu Ile Arg	Ala	
	100	105	110			
tgc atg ctg	gtg ccg aag	gtt gct ggg	ggt cat tat	gtc caa atg	gct	2185
Cys Met Leu	Val Arg Lys	Val Ala Gly	Gly His Tyr	Val Gln Met	Ala	
	115	120	125			
ctc atg aag	ttg gcc gca	ctg aca ggt	acg tac gtt	tat gac cat	ctc	2233
Leu Met Lys	Leu Ala Ala	Leu Thr Gly	Thr Tyr Val	Tyr Asp His	Leu	
	130	135	140			
acc cca ctg	cgg gac tgg	gcc cac gcg	ggc cta cga	gac ctt gcg	gtg	2281
Thr Pro Leu	Arg Asp Trp	Ala His Ala	Gly Leu Arg	Asp Leu Ala	Val	
145	150	155	160			
gca gtt gag	ccc gtc gtc	ttc tct gat	atg gag acc	aag gtt atc	acc	2329
Ala Val Glu	Pro Val Val	Phe Ser Asp	Met Glu Thr	Lys Val Ile	Thr	
	165	170	175			
tgg ggg gca	gac acc gcg	gcg tgt ggg	gac atc atc	ttg ggc ctg	ccc	2377

Trp	Gly	Ala	Asp	Thr	Ala	Ala	Cys	Gly	Asp	Ile	Ile	Leu	Gly	Leu	Pro		
			180					185					190				
gtc	tcc	gcc	cgc	agg	ggg	agg	gag	ata	cat	ctg	gga	ccg	gca	gac	agc	2425	
Val	Ser	Ala	Arg	Arg	Gly	Arg	Glu	Ile	His	Leu	Gly	Pro	Ala	Asp	Ser		
		195					200					205					
ctt	gaa	ggg	cag	ggg	tgg	cga	ctc	ctc	gcg	cct	att	acg	gcc	tac	tcc	2473	
Leu	Glu	Gly	Gln	Gly	Trp	Arg	Leu	Leu	Ala	Pro	Ile	Thr	Ala	Tyr	Ser		
	210					215					220						
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	act	agc	ctc	aca	ggc	2521	
Gln	Gln	Thr	Arg	Gly	Leu	Leu	Gly	Cys	Ile	Ile	Thr	Ser	Leu	Thr	Gly		
225					230					235					240		
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569	
Arg	Asp	Arg	Asn	Gln	Val	Glu	Gly	Glu	Val	Gln	Val	Val	Ser	Thr	Ala		
			245						250					255			
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617	
Thr	Gln	Ser	Phe	Leu	Ala	Thr	Cys	Val	Asn	Gly	Val	Cys	Trp	Thr	Val		
			260					265					270				
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665	
Tyr	His	Gly	Ala	Gly	Ser	Lys	Thr	Leu	Ala	Gly	Pro	Lys	Gly	Pro	Ile		
		275					280					285					
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713	
Thr	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln	Asp	Leu	Val	Gly	Trp	Gln	Ala		
	290					295					300						
ccc	ccc	ggg	gcg	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761	
Pro	Pro	Gly	Ala	Arg	Ser	Leu	Thr	Pro	Cys	Thr	Cys	Gly	Ser	Ser	Asp		
305					310					315					320		
ctt	tac	ttg	gtc	acg	agg	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809	
Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg		
				325					330					335			
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	agg	ccc	gtc	tcc	tac	ttg	2857	
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu		
			340					345					350				
aag	ggc	tct	tcg	ggc	ggt	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905	
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val		
		355					360					365					
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcg	aag	gcg	gtg	2953	
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val		
	370					375					380						
gac	ttt	gta	ccc	gtc	gag	tct	atg	gaa	acc	act	atg	cgg	tcc	ccg	gtc	3001	
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val		
385					390					395					400		

ttc acg gac aac tcg tcc cct ccg gcc gta ccg cag aca ttc cag gtg	3049
Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Thr Phe Gln Val	
405 410 415	
gcc cat cta cac gcc cct act ggt agc ggc aag agc act aag gtg ccg	3097
Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro	
420 425 430	
gct gcg tat gca gcc caa ggg tat aag gtg ctt gtc ctg aac ccg tcc	3145
Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser	
435 440 445	
gtc gcc gcc acc cta ggt ttc ggg gcg tat atg tct aag gca cat ggt	3193
Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly	
450 455 460	
atc gac cct aac atc aga acc ggg gta agg acc atc acc acg ggt gcc	3241
Ile Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ala	
465 470 475 480	
ccc atc acg tac tcc acc tat ggc aag ttt ctt gcc gac ggt ggt tgc	3289
Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys	
485 490 495	
tct ggg ggc gcc tat gac atc ata ata tgt gat gag tgc cac tca act	3337
Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys Asp Glu Cys His Ser Thr	
500 505 510	
gac tcg acc act atc ctg ggc atc ggc aca gtc ctg gac caa gcg gag	3385
Asp Ser Thr Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu	
515 520 525	
acg gct gga gcg cga ctc gtc gtg ctc gcc acc gct acg cct ccg gga	3433
Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly	
530 535 540	
tcg gtc acc gtg cca cat cca aac atc gag gag gtg gct ctg tcc agc	3481
Ser Val Thr Val Pro His Pro Asn Ile Glu Glu Val Ala Leu Ser Ser	
545 550 555 560	
act gga gaa atc ccc ttt tat ggc aaa gcc atc ccc atc gag acc atc	3529
Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Ile Glu Thr Ile	
565 570 575	
aag ggg ggg agg cac ctc att ttc tgc cat tcc aag aag aaa tgt gat	3577
Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp	
580 585 590	
gag ctc gcc gcg aag ctg tcc ggc ctc gga ctc aat gct gta gca tat	3625
Glu Leu Ala Ala Lys Leu Ser Gly Leu Gly Leu Asn Ala Val Ala Tyr	
595 600 605	
tac cgg ggc ctt gat gta tcc gtc ata cca act agc gga gac gtc att	3673
Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Ile	
610 615 620	

gtc gta gca acg gac gct cta atg acg ggc ttt acc ggc gat ttc gac Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp 625 630 635 640	3721
tca gtg atc gac tgc aat aca tgt gtc acc cag aca gtc gac ttc agc Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser 645 650 655	3769
ctg gac ccg acc ttc acc att gag acg acg acc gtg cca caa gac gcg Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Val Pro Gln Asp Ala 660 665 670	3817
gtg tca cgc tcg cag cgg cga ggc agg act ggt agg ggc agg atg ggc Val Ser Arg Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Met Gly 675 680 685	3865
att tac agg ttt gtg act cca gga gaa cgg ccc tcg ggc atg ttc gat Ile Tyr Arg Phe Val Thr Pro Gly Glu Arg Pro Ser Gly Met Phe Asp 690 695 700	3913
tcc tcg gtt ctg tgc gag tgc tat gac gcg ggc tgt gct tgg tac gag Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu 705 710 715 720	3961
ctc acg ccc gcc gag acc tca gtt agg ttg cgg gct tac cta aac aca Leu Thr Pro Ala Glu Thr Ser Val Arg Leu Arg Ala Tyr Leu Asn Thr 725 730 735	4009
cca ggg ttg ccc gtc tgc cag gac cat ctg gag ttc tgg gag agc gtc Pro Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ser Val 740 745 750	4057
ttt aca ggc ctc acc cac ata gac gcc cat ttc ttg tcc cag act aag Phe Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys 755 760 765	4105
cag gca gga gac aac ttc ccc tac ctg gta gca tac cag gct acg gtg Gln Ala Gly Asp Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val 770 775 780	4153
tgc gcc agg gct cag gct cca cct cca tcg tgg gac caa atg tgg aag Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys 785 790 795 800	4201
tgt ctc ata cgg cta aag cct acg ctg cac ggg cca acg ccc ctg ctg Cys Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu 805 810 815	4249
tat agg ctg gga gcc gtt caa aac gag gtt act acc aca cac ccc ata Tyr Arg Leu Gly Ala Val Gln Asn Glu Val Thr Thr Thr His Pro Ile 820 825 830	4297
acc aaa tac atc atg gca tgc atg tcg gct gac ctg gag gtc gtc acg Thr Lys Tyr Ile Met Ala Cys Met Ser Ala Asp Leu Glu Val Val Thr	4345

835					840					845							
agc	acc	tgg	gtg	ctg	gta	ggc	gga	gtc	cta	gca	gct	ctg	gcc	gcg	tat	4393	
Ser	Thr	Trp	Val	Leu	Val	Gly	Gly	Val	Leu	Ala	Ala	Leu	Ala	Ala	Tyr		
850					855					860							
tgc	ctg	aca	aca	ggc	agc	gtg	gtc	att	gtg	ggc	agg	atc	atc	ttg	tcc	4441	
Cys	Leu	Thr	Thr	Gly	Ser	Val	Val	Ile	Val	Gly	Arg	Ile	Ile	Leu	Ser		
865					870					875					880		
gga	aag	ccg	gcc	atc	att	ccc	gac	agg	gaa	gtc	ctt	tac	cgg	gag	ttc	4489	
Gly	Lys	Pro	Ala	Ile	Ile	Pro	Asp	Arg	Glu	Val	Leu	Tyr	Arg	Glu	Phe		
885					890					895							
gat	gag	atg	gaa	gag	tgc	gcc	tca	cac	ctc	cct	tac	atc	gaa	cag	gga	4537	
Asp	Glu	Met	Glu	Glu	Cys	Ala	Ser	His	Leu	Pro	Tyr	Ile	Glu	Gln	Gly		
900					905					910							
atg	cag	ctc	gcc	gaa	caa	ttc	aaa	cag	aag	gca	atc	ggg	ttg	ctg	caa	4585	
Met	Gln	Leu	Ala	Glu	Gln	Phe	Lys	Gln	Lys	Ala	Ile	Gly	Leu	Leu	Gln		
915					920					925							
aca	gcc	acc	aag	caa	gcg	gag	gct	gct	gct	ccc	gtg	gtg	gaa	tcc	aag	4633	
Thr	Ala	Thr	Lys	Gln	Ala	Glu	Ala	Ala	Ala	Pro	Val	Val	Glu	Ser	Lys		
930					935					940							
tgg	cgg	acc	ctc	gaa	gcc	ttc	tgg	gcg	aag	cat	atg	tgg	aat	ttc	atc	4681	
Trp	Arg	Thr	Leu	Glu	Ala	Phe	Trp	Ala	Lys	His	Met	Trp	Asn	Phe	Ile		
945					950					955					960		
agc	ggg	ata	caa	tat	tta	gca	ggc	ttg	tcc	act	ctg	cct	ggc	aac	ccc	4729	
Ser	Gly	Ile	Gln	Tyr	Leu	Ala	Gly	Leu	Ser	Thr	Leu	Pro	Gly	Asn	Pro		
965					970					975							
gcg	ata	gca	tca	ctg	atg	gca	ttc	aca	gcc	tct	atc	acc	agc	ccg	ctc	4777	
Ala	Ile	Ala	Ser	Leu	Met	Ala	Phe	Thr	Ala	Ser	Ile	Thr	Ser	Pro	Leu		
980					985					990							
acc	acc	caa	cat	acc	ctc	ctg	ttt	aac	atc	ctg	ggg	gga	tgg	gtg	gcc	4825	
Thr	Thr	Gln	His	Thr	Leu	Leu	Phe	Asn	Ile	Leu	Gly	Gly	Trp	Val	Ala		
995					1000					1005							
gcc	caa	ctt	gct	cct	ccc	agc	gct	gct	tct	gct	ttc	gta	ggc	gcc	ggc	4873	
Ala	Gln	Leu	Ala	Pro	Pro	Ser	Ala	Ala	Ser	Ala	Phe	Val	Gly	Ala	Gly		
1010					1015					1020							
atc	gct	gga	gcg	gct	gtt	ggc	agc	ata	ggc	ctt	ggg	aag	gtg	ctt	gtg	4921	
Ile	Ala	Gly	Ala	Ala	Val	Gly	Ser	Ile	Gly	Leu	Gly	Lys	Val	Leu	Val		
1025					1030					1035					1040		
gat	att	ttg	gca	ggt	tat	gga	gca	ggg	gtg	gca	ggc	gcg	ctc	gtg	gcc	4969	
Asp	Ile	Leu	Ala	Gly	Tyr	Gly	Ala	Gly	Val	Ala	Gly	Ala	Leu	Val	Ala		
1045					1050					1055							
ttt	aag	gtc	atg	agc	ggc	gag	atg	ccc	tcc	acc	gag	gac	ctg	gtt	aac	5017	

Phe	Lys	Val	Met	Ser	Gly	Glu	Met	Pro	Ser	Thr	Glu	Asp	Leu	Val	Asn		
			1060					1065						1070			
cta	ctc	cct	gct	atc	ctc	tcc	cct	ggc	gcc	cta	gtc	gtc	ggg	gtc	gtg	5065	
Leu	Leu	Pro	Ala	Ile	Leu	Ser	Pro	Gly	Ala	Leu	Val	Val	Gly	Val	Val		
		1075					1080					1085					
tgc	gca	gcg	ata	ctg	cgt	cgg	cac	gtg	ggc	cca	ggg	gag	ggg	gct	gtg	5113	
Cys	Ala	Ala	Ile	Leu	Arg	Arg	His	Val	Gly	Pro	Gly	Glu	Gly	Ala	Val		
	1090					1095					1100						
cag	tgg	atg	aac	cgg	ctg	ata	gcg	ttc	gct	tcg	cgg	ggg	aac	cac	gtc	5161	
Gln	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Ser	Arg	Gly	Asn	His	Val		
1105					1110					1115					1120		
tcc	ccc	acg	cac	tat	gtg	cct	gag	agc	gac	gct	gca	gca	cgt	gtc	act	5209	
Ser	Pro	Thr	His	Tyr	Val	Pro	Glu	Ser	Asp	Ala	Ala	Ala	Arg	Val	Thr		
			1125					1130						1135			
cag	atc	ctc	tct	agt	ctt	acc	atc	act	cag	ctg	ctg	aag	agg	ctt	cac	5257	
Gln	Ile	Leu	Ser	Ser	Leu	Thr	Ile	Thr	Gln	Leu	Leu	Lys	Arg	Leu	His		
		1140						1145					1150				
cag	tgg	atc	aac	gag	gac	tgc	tcc	acg	cca	tgc	tcc	ggc	tcg	tgg	cta	5305	
Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
		1155					1160					1165					
aga	gat	gtt	tgg	gat	tgg	ata	tgc	acg	gtg	ttg	act	gat	ttc	aag	acc	5353	
Arg	Asp	Val	Trp	Asp	Trp	Ile	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Thr		
	1170					1175					1180						
tgg	ctc	cag	tcc	aag	ctc	ctg	ccg	cga	ttg	ccg	gga	gtc	ccc	ttc	ttc	5401	
Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
1185					1190					1195					1200		
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449	
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
			1205					1210						1215			
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
			1220					1225					1230				
ggt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Gly	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
		1235					1240					1245					
gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593	
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser		
	1250					1255					1260						
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641	
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
1265					1270					1275					1280		

tac gtg gag gtt acg cgg gtg ggg gat ttc cac tac gtg acg ggc atg	5689
Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met	
1285 1290 1295	
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc	5737
Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe	
1300 1305 1310	
ttc aca gaa gtg gat ggg gtg cgg ttg cac agg tac gct cca gcg tgc	5785
Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys	
1315 1320 1325	
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa	5833
Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln	
1330 1335 1340	
tac ctg gtt ggg tca cag ctc cca tgc gag ccc gaa ccg gac gta gca	5881
Tyr Leu Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala	
1345 1350 1355 1360	
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg	5929
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr	
1365 1370 1375	
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca	5977
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser	
1380 1385 1390	
tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act acc	6025
Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr	
1395 1400 1405	
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg	6073
Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp	
1410 1415 1420	
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gaa aat aag	6121
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys	
1425 1430 1435 1440	
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag	6169
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	
1445 1450 1455	
agg gaa gta tcc gtt ccg gcg gag atc ctg ccg agg tcc agg aaa ttc	6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
1460 1465 1470	
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg	6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
1475 1480 1485	
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg	6313
Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
1490 1495 1500	

tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg	6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
1505 1510 1515 1520	
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
1525 1530 1535	
gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
1540 1545 1550	
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly	
1570 1575 1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser	
1585 1590 1595 1600	
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg	6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp	
1605 1610 1615	
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro	
1620 1625 1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr	
1635 1640 1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe	
1650 1655 1660	
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag	6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
1665 1670 1675 1680	
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	
1685 1690 1695	
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly	
1700 1705 1710	
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His	

1715	1720	1725	
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att			7033
Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile			
1730	1735	1740	
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag			7081
Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu			
1745	1750	1755	1760
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg			7129
Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly			
	1765	1770	1775
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc			7177
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu			
	1780	1785	1790
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga			7225
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly			
	1795	1800	1805
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct			7273
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro			
1810	1815	1820	
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag			7321
Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu			
1825	1830	1835	1840
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc			7369
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Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg			
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Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr			
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Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp			
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Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser			
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Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His	
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Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu	
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Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp	
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Val Gly Ile Tyr Leu Leu Pro Asn Arg *
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Cys Leu Thr Thr Gly Ser Val Val Ile Val Gly Arg Ile Ile Leu Ser	

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			1140					1145					1150				
cag	tgg	atc	aac	gag	gac	tgc	tcc	acg	cca	tgc	tcc	ggc	tcg	tgg	cta	5305	
Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
		1155				1160						1165					
aga	gat	gtt	tgg	gat	tgg	ata	tgc	acg	gtg	ttg	act	gat	ttc	aag	gcc	5353	
Arg	Asp	Val	Trp	Asp	Trp	Ile	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Ala		
	1170					1175					1180						
tgg	ctc	cag	tcc	aag	ctc	ctg	ccg	cga	ttg	ccg	gga	gtc	ccc	ttc	ttc	5401	
Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
1185					1190					1195				1200			
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449	
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
				1205					1210					1215			
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
			1220					1225					1230				
tgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
		1235					1240					1245					
gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593	
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser		
	1250					1255					1260						
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641	
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
1265					1270					1275				1280			
tac	gtg	gag	gtt	acg	cga	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689	
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met		
				1285					1290					1295			
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737	
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe		
			1300					1305					1310				

ttc aca gaa gtg gat ggg gtg cgg ttg cac agg tac gct cca gcg tgc	5785
Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys	
1315 1320 1325	
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa	5833
Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln	
1330 1335 1340	
tac ccg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca	5881
Tyr Pro Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala	
1345 1350 1355 1360	
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg	5929
Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr	
1365 1370 1375	
gct aag cgt agg ctg gcc agg gga tct ccc ccc tcc ttg gcc agc tca	5977
Ala Lys Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Leu Ala Ser Ser	
1380 1385 1390	
tca gct agc cag ctg tct gcg cct tcc ttg aag gca aca tgc act acc	6025
Ser Ala Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Thr	
1395 1400 1405	
cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg	6073
Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp	
1410 1415 1420	
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gag aat aag	6121
Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys	
1425 1430 1435 1440	
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag	6169
Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu	
1445 1450 1455	
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc	6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
1460 1465 1470	
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg	6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
1475 1480 1485	
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg	6313
Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
1490 1495 1500	
tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg	6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
1505 1510 1515 1520	
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
1525 1530 1535	

gag ctc gcc aca aag acc ttc ggc agc tcc gaa tcg tcg gcc gtc gac	6457
Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
1540 1545 1550	
agc ggc acg gca acg gcc tct cct gac cag ccc tcc gac gac ggc gac	6505
Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly	
1570 1575 1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser	
1585 1590 1595 1600	
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg	6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp	
1605 1610 1615	
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro	
1620 1625 1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr	
1635 1640 1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe	
1650 1655 1660	
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag	6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
1665 1670 1675 1680	
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	
1685 1690 1695	
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly	
1700 1705 1710	
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His	
1715 1720 1725	
atc cgc tcc gtg tgg aag gac ttg ctg gaa gac act gag aca cca att	7033
Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile	
1730 1735 1740	
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag	7081
Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu	

1745	1750	1755	1760	
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg				7129
Lys Gly Gly Arg	Lys Pro Ala Arg Leu	Ile Val Phe Pro Asp Leu Gly		
	1765	1770	1775	
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc				7177
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu				
	1780	1785	1790	
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga				7225
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly				
	1795	1800	1805	
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct				7273
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro				
	1810	1815	1820	
atg ggc ttc gca tat gac acc cgc tgt ttt gac tca acg gtc act gag				7321
Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu				
	1825	1830	1835	1840
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc				7369
Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala				
	1845	1850	1855	
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc				7417
Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile				
	1860	1865	1870	
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg				7465
Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg				
	1875	1880	1885	
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca				7513
Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr				
	1890	1895	1900	
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac				7561
Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp				
	1905	1910	1915	1920
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc				7609
Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser				
	1925	1930	1935	
gcg ggg acc caa gag gac gag gcg agc cta cgg gcc ttc acg gag gct				7657
Ala Gly Thr Gln Glu Asp Glu Ala Ser Leu Arg Ala Phe Thr Glu Ala				
	1940	1945	1950	
atg act aga tac tct gcc ccc cct ggg gac ccg ccc aaa cca gaa tac				7705
Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Lys Pro Glu Tyr				
	1955	1960	1965	
gac ttg gag ttg ata aca tca tgc tcc tcc aat gtg tca gtc gcg cac				7753

Asp	Leu	Glu	Leu	Ile	Thr	Ser	Cys	Ser	Ser	Asn	Val	Ser	Val	Ala	His		
1970						1975				1980							
gat	gca	tct	ggc	aaa	agg	gtg	tac	tat	ctc	acc	cgt	gac	ccc	acc	acc	7801	
Asp	Ala	Ser	Gly	Lys	Arg	Val	Tyr	Tyr	Leu	Thr	Arg	Asp	Pro	Thr	Thr		
1985					1990				1995						2000		
ccc	ctt	gcg	cgg	gct	gcg	tgg	gag	aca	gct	aga	cac	act	cca	gtc	aat	7849	
Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn		
				2005					2010						2015		
tcc	tgg	cta	ggc	aac	atc	atc	atg	tat	gcg	ccc	acc	ttg	tgg	gca	agg	7897	
Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg		
			2020					2025							2030		
atg	atc	ctg	atg	act	cat	ttc	ttc	tcc	atc	ctt	cta	gct	cag	gaa	caa	7945	
Met	Ile	Leu	Met	Thr	His	Phe	Phe	Ser	Ile	Leu	Leu	Ala	Gln	Glu	Gln		
			2035					2040							2045		
ctt	gaa	aaa	gcc	cta	gat	tgt	cag	atc	tac	ggg	gcc	tgt	tac	tcc	att	7993	
Leu	Glu	Lys	Ala	Leu	Asp	Cys	Gln	Ile	Tyr	Gly	Ala	Cys	Tyr	Ser	Ile		
			2050			2055									2060		
gag	cca	ctt	gac	cta	cct	cag	atc	att	caa	cga	ctc	cac	ggc	ctt	agc	8041	
Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile	Gln	Arg	Leu	His	Gly	Leu	Ser		
2065					2070					2075					2080		
gca	ttt	tca	ctc	cat	agt	tac	tct	cca	ggt	gag	atc	aat	agg	gtg	gct	8089	
Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro	Gly	Glu	Ile	Asn	Arg	Val	Ala		
				2085						2090					2095		
tca	tgc	ctc	agg	aaa	ctt	ggg	gta	ccg	ccc	ttg	cga	gtc	tgg	aga	cat	8137	
Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro	Pro	Leu	Arg	Val	Trp	Arg	His		
			2100					2105							2110		
cgg	gcc	aga	agt	gtc	cgc	gct	agg	cta	ctg	tcc	cag	ggg	ggg	agg	gct	8185	
Arg	Ala	Arg	Ser	Val	Arg	Ala	Arg	Leu	Leu	Ser	Gln	Gly	Gly	Arg	Ala		
			2115					2120							2125		
gcc	act	tgt	ggc	aag	tac	ctc	ttc	aac	tgg	gca	gta	agg	acc	aag	ctc	8233	
Ala	Thr	Cys	Gly	Lys	Tyr	Leu	Phe	Asn	Trp	Ala	Val	Arg	Thr	Lys	Leu		
			2130					2135							2140		
aaa	ctc	act	cca	atc	ccg	gct	gcg	tcc	cag	ttg	gat	tta	tcc	agc	tgg	8281	
Lys	Leu	Thr	Pro	Ile	Pro	Ala	Ala	Ser	Gln	Leu	Asp	Leu	Ser	Ser	Trp		
2145					2150					2155					2160		
ttc	gtt	gct	ggt	tac	agc	ggg	gga	gac	ata	tat	cac	agc	ctg	tct	cgt	8329	
Phe	Val	Ala	Gly	Tyr	Ser	Gly	Gly	Asp	Ile	Tyr	His	Ser	Leu	Ser	Arg		
				2165					2170						2175		
gcc	cga	ccc	cgc	tgg	ttc	atg	tgg	tgc	cta	ctc	cta	ctt	tct	gta	ggg	8377	
Ala	Arg	Pro	Arg	Trp	Phe	Met	Trp	Cys	Leu	Leu	Leu	Leu	Ser	Val	Gly		
			2180					2185							2190		

gta ggc atc tat cta ctc ccc aac cga tga acgaggagct aaacactcca	8427
Val Gly Ile Tyr Leu Leu Pro Asn Arg *	
2195	2200

ggccaatagg ccatcctggt tttttccctt tttttttttt tttttttttt tttttttttt	8487
tttttttttt ttttctcctt ttttttttct cttttttttcc ttttctttcc tttgggtggct	8547
ccatcttagc cctagtcacg gctagctgtg aaaggtccgt gagccgcttg actgcagaga	8607
gtgctgatac tggcctctct gcagatcaag t	8638